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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,190

10/13/2005

Yoshinori Iwabuchi

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SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

BAND, MICHAEL A

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

12/12/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/553,190	Applicant(s) IWABUCHI ET AL.	
	Examiner MICHAEL BAND	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-10 and 12-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-10 and 12-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-10, 12-14, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al (US Patent No. 6,738,203) in view of Nihei et al (US Patent No. 4,692,230) and Ito et al (JP No. 02240292).

With respect to claims 1, 3-10, 12-14, and 17-20, Ando et al discloses providing a power limiting material being a composite, porous thin film comprising a metal oxide (i.e. second metal) and a transparent additive (i.e. first metal), where both said metal oxide and said transparent additive are deposited via simultaneous or alternate oblique sputtering (abstract; col. 9, lines 51-64; col. 10, lines 59-67). Ando et al further discloses the second metal comprises an oxide selected from Ti, Zn, Nb, In, Sn, Sb, and W (col. 2, lines 46-58), while the first metal comprises SiO₂, Al₂O₃, ZrO₂, ZrO, and ZnSe (col. 3, lines 39-43). However Ando et al is limited in that while it is disclosed to sputter both the first metal and second metal simultaneously, a specific power supply is not suggested.

Nihei et al teaches a forming an alloy or compound thin film by alternate sputtering targets of different materials (abstract), where fig. 1 depicts the sputtering as being capable of simultaneous sputtering. Fig. 1 further depicts a DC pulse power

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source [1] connected to switching transistors [6], [7] which are connected to targets [4], [5], where said switching transistors [6], [7] can individually turn on and off the power applied to each target (col. 2, lines 6-16). Figs. 2-4 depict the target materials comprising either two conductive targets, a conductive target and insulative target, or two insulative targets. Nihei et al cites the advantage of this sputtering as enhanced adhesion among the particles or between the adjacent layers of the composite film (col. 1, lines 44-49).

It would have been obvious to one of ordinary skill in the art to use the sputtering apparatus taught by Nihei et al for the oblique sputtering of Ando et al to gain the advantage of enhanced adhesion among the sputtered particles.

However Ando et al is further limited in that it is not suggested to remove portions of the deposited materials.

Ito et al teaches obtaining a porous Al alloy material having improved corrosion resistance and insulating properties, where the surface of said Al alloy is cleaned by alkali etching to remove intermetallic compounds (abstract).

It would have been obvious to use clean the surface Al alloy by alkali etching as taught by Ito et al for the sputtered intermetallic composite material of Ando et al to gain the advantages of superior corrosion resistance and insulating properties.

With respect to claim 9, modified Ando et al further discloses a post-treatment performed including a heat treatment (col. 11, lines 1-9).

3. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ando et al (US Patent No. 6,738,203), Nihei et al (US Patent No. 4,692,230), and Ito et

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al (JP No. 02240292) as applied to claims 1 and 10 above, and further in view of Yamada et al (US Patent No. 4,954,232).

With respect to claims 15-16, the references are cited as discussed for claims 1 and 10. However modified Ando et al is limited in that it is not suggested to rotate a substrate.

Yamada et al teaches in fig. 7 depicts two sputter targets [12], [13] composed of different materials and powered by distinct power sources with a substrate capable or rotation to form a combination of films (col. 6, lines 55-59).

It would have been obvious to one of ordinary skill in the art to try rotating a substrate as taught by Yamada et al in an attempt to provide improved film uniformity, as a person with ordinary skill has good reason to pursue the known options within his or her grasp.

Response to Arguments

4. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection due to the new claim limitation requiring independently applying electric power.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent Nos. 4,851,095; 4,260,466; 6,328,865; 6,770,353; 6,333,084; JP No. 61071804.

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6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Band whose telephone number is (571) 272-9815. The examiner can normally be reached on Mon-Fri, 8am-4pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on (571) 272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. B./

Examiner, Art Unit 1795

/Alexa D. Neckel/

Supervisory Patent Examiner, Art Unit 1795